

We claim:

1. A salt-like chemical compound of the formula (I),

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where

- 10 R^1 are identical or different and are each a hydrogen atom, a halogen atom, $\text{C}_1\text{-C}_{20}$ -alkyl, $\text{C}_6\text{-C}_{14}$ -aryl, $\text{C}_1\text{-C}_{10}$ -alkoxy, $\text{C}_2\text{-C}_{10}$ -alkenyl, $\text{C}_7\text{-C}_{20}$ -arylalkyl, $\text{C}_7\text{-C}_{20}$ -alkylaryl, $\text{C}_6\text{-C}_{10}$ -aryloxy, $\text{C}_1\text{-C}_{10}$ -haloalkyl, $\text{C}_6\text{-C}_{10}$ -haloaryl, $\text{C}_2\text{-C}_{10}$ -alkynyl or $\text{C}_3\text{-C}_{20}$ -alkylsilyl,
- 15 M is an element of main group III of the Periodic Table of the Elements, and
- R^2 is a substituted or unsubstituted heterocycle.

2. A salt-like chemical compound of the formula I as claimed in claim 1, wherein the heterocycle is pyrrolium, indolium or imidazolium.

3. A salt-like chemical compound of the formula I as claimed in claim 1, wherein M is aluminum or boron.

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4. A salt-like chemical compound as claimed in claim 1, wherein the heterocycle R^2 is unsubstituted or substituted by at least one halogen atom, $\text{C}_1\text{-C}_{20}$ -alkyl, $\text{C}_1\text{-C}_{10}$ -alkoxy, $\text{C}_2\text{-C}_{10}$ -alkenyl, $\text{C}_7\text{-C}_{20}$ -arylalkyl, $\text{C}_7\text{-C}_{20}$ -alkylaryl, $\text{C}_6\text{-C}_{10}$ -aryloxy, $\text{C}_1\text{-C}_{20}$ -haloalkyl, $\text{C}_6\text{-C}_{14}$ -haloaryl, $\text{C}_2\text{-C}_{10}$ -alkynyl or $\text{C}_3\text{-C}_{20}$ -alkylsilyl.

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5. A salt-like chemical compound as claimed in claim 1, wherein the heterocycle R^2 is unsubstituted.

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6. A process for preparing compounds of the formula (I) as claimed in claim 1, in which compounds of heterocycles R^2 containing elements of main group I or II of the Periodic Table of the Elements are firstly reacted with compounds of the formula $(\text{C}_6\text{R}^1_5)_3\text{M}$ in a solvent to form compounds of the formula $[(\text{C}_6\text{R}^1_5)_3\text{MR}^2]^+$ which are subsequently protonated by reaction with a proton donor, where R^1 , M and R^2 are as defined in formula (I).

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- 45 7. A catalyst system comprising at least one organometallic compound (A) of a transition metal, at least one compound of the formula (I) as claimed in claim 1, if desired an alkyl

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compound (B) of an element of group III or IV of the Periodic Table of the Elements and, if desired, at least one support component (C).

- 5 8. A process for the polymerization of olefins, wherein the polymerization is carried out in the presence of a catalyst system as claimed in claim 6.

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